

GIFT
JUN 25 1915

THE Pacific Pharmacist

Vol. 9

JUNE, 1915

No. 2

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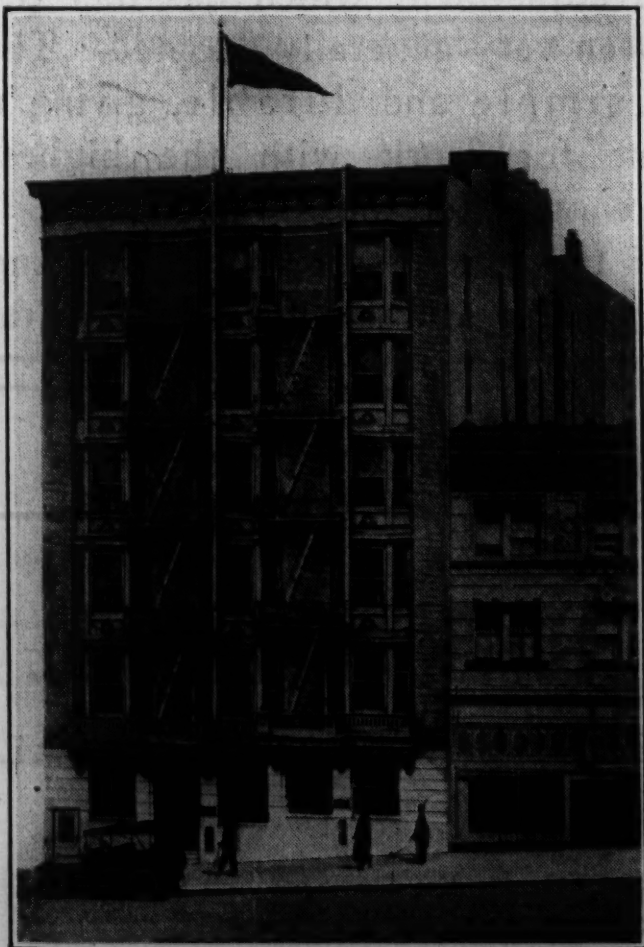
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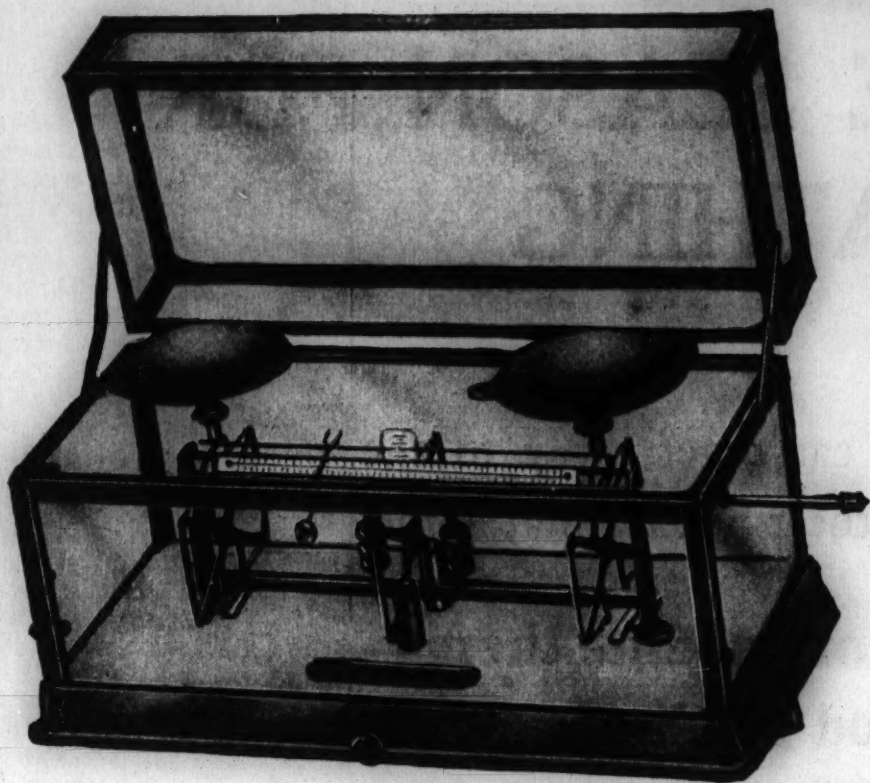
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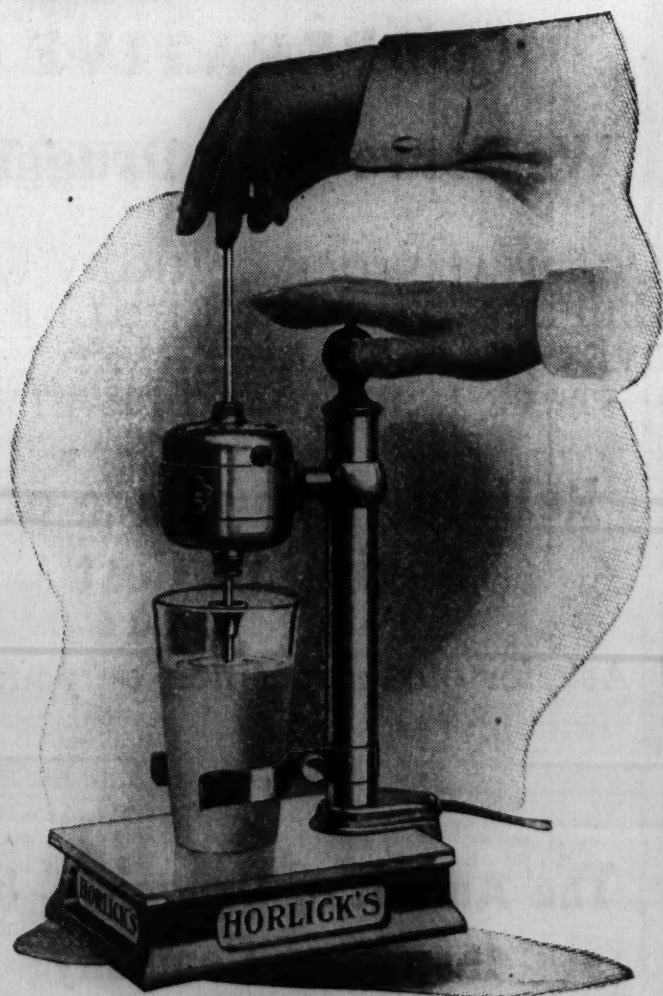
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THE Pacific Pharmacist

Vol. 9

JUNE, 1915

No. 2

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on behalf of the Pharmacists and the interests of the Drug Trade.

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J. H. DAWSON

R. E. WHITE

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Communications on questions pertaining to Pharmacy and the Drug Business are solicited. The name of the writer should accompany every article, not necessarily for publication, but as a guarantee of good faith.

F. C. SMITH, Business Manager.

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EDITORIAL AND ORIGINAL PAPERS.

LESSONS TAUGHT BY THE PANAMA- PACIFIC INTERNATIONAL EXPOSITION.

The more one visits the Exposition and studies it as a whole is he impressed with the wonder of it all.

Man has ceratinly done great things but he is going to do greater. As a matter of fact, the things that he has done are insignificant in comparison with the things we see him preparing to do.

By comparing our own individual accomplishments with those shown by the different exhibitors at the Exposition, we get the measure of our own progress in the things that demand our time and attention, as in a mirror.

This will have a most wholesome effect, since those who are unconscious of their inefficiency will be made to realize just where they stand and so set their standards higher, while those who are making creditable progress will receive a reassuring stimulus that will spur them on to greater efficiency.

There is a deep undercurrent of Democracy in the atmosphere in this wonderland.

This Democracy knows nothing of geographical limits, narrow creeds or dogma and will not be content until every man looks into the eye of his brother and clasps him by the hand.

Then will selfishness and indifference be a thing of the past and it will be "Each for all and all for each."

This is the message of the Exposition.

THE EXPOSITION AND VISITING PHARMACISTS.

This number of The Pacific Pharmacist contains information that will be of use to Pharmacists who will visit the Panama-Pacific International Exposition.

We advise our readers to study these articles carefully and make note of such things as they shall want especially to see. By so doing they can make the most of the limited time at their command.

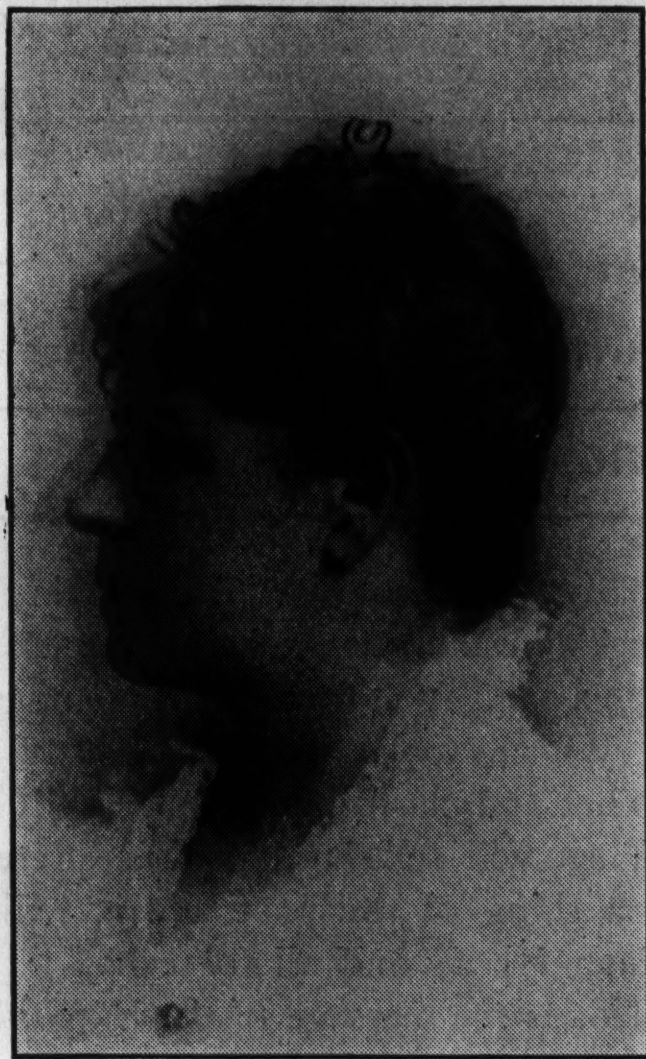
If any further information is desired we will gladly furnish it if our readers will advise us.

The July number of this journal will contain other items of interest along these lines.

This issue will be placed in your hands about July 30th, so as to give you all necessary information with reference to the Exposition and the A. Ph. A. meetings.

INA COOLBRITH, POET LAUREATE OF CALIFORNIA.

On June 30 Miss Ina Coolbrith was invested with the poet's laurel crown; the president of our State University, professors from Berkeley, from Leland Stanford University, our United States Senator, our Governor, doctors, clergymen, lawyers, literati, sculptors, painters and representatives of all professions and all walks of life



"Palmarum qua meruit ferat"

attended and added by their presence to the brilliancy of the occasion. The editors of the Pacific Pharmacist think it is not out of place to say a few words about this celebration and of the noble and good woman in honor of whom it was given. Poets and apothecaries may seem at first glance to have little affinity with one another and one of the poets of England gives this stern advice to the student of pharmacy:

"—Scorn the poets as your direst foes
Nor lean upon the pestle and com-
pose."

But yet most educated pharmacists have a taste for literature and as the purest and best literature is lyrical or metrical in form as a natural consequence pharmacists are, as Shakespeare says, "given to poetry." Be-

fore us lies a letter from a student of the California College of Pharmacy who during vacation taught school in a rural section of the State, taking with her two books on botany, one "Wild Flowers of California," by May E. Parsons, and the other "Fairland of Flowers," by Mara L. Pratt. In her letter she speaks of the delight she experienced in identifying the flowers and comparing them with Miss Coolbrith's exquisite descriptions. The California College of Pharmacy has always devoted a great deal of attention to the subject of botany, its first occupant of that chair was Dr. H. H. Behr, author of "Flora of the Vicinity of San Francisco." He was naturally attracted to the brilliant young poet whose descriptions of the flora of our state were copied into most of the popular books of botany and into almost all anthologies of verse in the English-speaking tongue. And on his deathbed, when he was no longer able to correct and arrange the material for his last volume, he entrusted it to Miss Ina Coolbrith.

With the *Eschscholtzia Californica*, the name of the poet Aldebert von Chamisso will always be associated and surely to all English-speaking people the same flower will recall the work of our own poet, the perfect sonnet *Copa de Oro*, a sonnet which loses nothing in luster when set side by side with the sonnets of Milton or of Wordsworth, the two great masters of this form of verse.

Some writer has mentioned the fact that in all Irish homes will be found a copy of Moore's *Melodies*, in all Scotch homes the lyrics of Burns and on the bookshelf of all educated Californians will be found the volume "Songs from the Golden Gate," by Ina Coolbrith. We congratulate Miss Coolbrith on the celebration of June 30, but not alone Miss Coolbrith but also the people of California are to be congratulated that they freely expressed their admiration for her work as a poet and their respect and love for her as a woman. Long may she

remain with us and the words of cheer, of encouragement and of hope that she has sung to us who toil in this work-a-day world of worry and fret may they return to her a thousandfold and may her years be years of peace and happiness. R. E. WHITE.

THE EXTRACTION AND PURIFICATION OF ADEPS LANAE.

The busy progressive pharmacist is perhaps today at the dawn of a new era of commercial development. The disturbed market conditions since the outbreak of the European war, the extravagant prices demanded for many drugs and chemicals, has stirred the pharmacist into activity; for it is a fact no argument is so convincing, so productive of quick action, as the one which appeals to the pocketbook. In a sense the pocketbook argument has made us dependent upon a foreign source for many of our supplies, products that could be produced in this country for a trifle more than that paid the foreign producer, and rather than spend a few dollars in building up our own resources we have allowed our trade to go abroad. And now in a few months many will have disbursed in advanced prices what it has taken them years to save by buying in foreign markets. For example, a few months ago methyl salicylate sold for 30c a pound, today it is quoted at \$1.50 per pound. Saccharin sold for \$1.00 a pound, today it sells for \$4.00. Coumarin sold for 20c to 25c an ounce now jumped to \$1.00 and \$1.25. That we were not of necessity dependent upon the foreign market is proven by the fact that I have before me a sample of coumarin of superior quality, and "made in America," which is offered at 40c per ounce.

While many of the substances used in the modern practice of medicine are made by processes patented and controlled by the foreign producer this does not apply in all cases. In fact, in many cases, there is no doubt that the articles could be produced just as well in this country if we would but take the time to investigate and having investigated, would encourage the one trying to de-

velop a new industry. Take for instance Adeps Lanae or Lanolin. Why should not Lanolin be produced in this country? Why should the price of this article jump from 25c a pound to 80c? It is not because we are lacking in raw material since in San Francisco alone eight million pounds of wool is scoured annually, which means that over three millions of pounds of Lanolin finds its way down our sewers every year. It is evident from this that the high price is not owing to scarcity of raw material.

Adeps Lanae, or as it is commonly called "Lanolin," may be considered a by-product since it is seldom sought for itself, but is washed from the wool in a more or less saponified condition, in the process of "scouring." Owing to the difficulty attending its recovery the wool-fat usually is allowed to go to waste. Furthermore the process of reducing the saponified wool-fat with an acid is or was patented. An alternative method for the extraction of wool-fat with a solvent is given in the U. S. Dispensatory. The most practical solvent is stated to be benzine, but the objection is made that it is nearly impossible to free the product from the last traces of petroleum odor. It is the object of this thesis to devise a method for the extraction of wool-fat and to perfect a process for the purification of the product so extracted.

The first essential for the extraction of wool-fat directly from the wool is a solvent that leaves no residual odor upon evaporation. Commercial gasoline, or benzine, is objectionable since it is a very complex body, its component parts having a range of distilling temperatures from 200° F. (93° C.) to 300° F. (148° C.). Furthermore it is usually contaminated with sulphur compounds which distil over even with the more volatile portion of the benzine. These sulphur compounds should be set free and washed from the benzine by the U. S. P. process. Then the purified benzine should have added to it an odorless fixed oil or a heavy hydro-carbon as Petrolatum Spissum U. S. P. This will tend to hold back any objectionable constituent of the benzine during its

distillation, which is the next step of the process. The purified benzine with the fixed oil or petrolatum in solution is placed in a distilling-flask provided with a thermometer and the temperature is carefully watched during the distillation. In other words the benzine is subjected to fractional distillation and the more volatile parts are kept separate from those of higher boiling point. Commercial benzine tested yielded about 50% distillate at a temperature not exceeding 220° F. (103° C.). That passing over at or below 220° F. will be found most suitable as a solvent for wool-fat. Any passing over at a higher temperature should be thoroughly tested before being used. Benzine purified and redistilled as above should have an ethereal smell and upon evaporation from bibulous paper should leave no residual odor.

Having thus prepared a suitable solvent, the wool to be operated upon is carefully and firmly packed in a straight percolator having an air-tight cover and provided with a piston so arranged that the wool may be subjected to heavy pressure, and means whereby a still neck may be attached converting the percolator into a still. Benzine is allowed to percolate slowly through the wool until the fat is removed, then the plunger or piston is screwed down until no more benzine can be forced out, then the piston is raised. The still-neck is attached and steam at a temperature of 230° F. (110° C.) is turned into the bottom of the percolator which passing up through the wool drives off the remaining traces of benzine which passing through a suitable worm is condensed along with the steam. If the texture of the wool is injured by the steam, warm air may be substituted which becoming saturated with the benzine vapor may be used as gas for heating purposes or exploded in a suitable engine for the production of power.

The percolate is now filtered until bright, then placed in a still and the benzine recovered and used for further operations, which process is conducted with practically no loss. Upon removal from the still the wool-fat will

probably contain traces of benzine and possess more or less odor of petroleum. If the process of purification is to end here the melted wool-fat should be exposed in shallow pans or stirred in a steam kettle until the last traces of benzine have disappeared. But if we desire to further purify the product this removal of traces of benzine may be delayed until the refining process is completed. The wool-fat taken from the still is mixed with just sufficient benzine to make it thoroughly liquid at ordinary temperatures. Then it is mixed with half its weight of freshly burnt charcoal composed of equal parts animal and wood charcoal. The animal charcoal will serve to decolorize the product while the wood charcoal will absorb the greater part of the odor. After macerating with the charcoal for two or three days it is thrown on a filter and benzine run through it until the fat is washed from the charcoal. The charcoal may be placed in a retort connected with a condenser and the benzine recovered. This benzine, however, will be found very impure and will need rectifying before it can be used in future operations. The heat should be continued until the charcoal is heated to dull redness and may be used for a second batch. If carefully fired it may be used many times before it becomes inactive or vitrified from continuous firing.

The filtered solution of wool-fat which should now be quite light in color and free from the rank wool odor is again subjected to distillation to recover the benzine, and the remaining fat is exposed in shallow pans, or stirred while being kept melted in a steam-kettle until the last traces of benzine has disappeared. We should now have a wool-fat, anhydrous, of light lemon color, and possessing little of the wool odor so characteristic of the well known brands on the market.

NOTE:—Much of the California wool will be found soiled with the resinous exudation of tar-weed, yerba santa, and other plants and this will be extracted with the lanolin forming an impurity

difficult, if not impossible to get rid of. If we wish to make a high grade lanolin it is essential that the wool be free from these impurities.

GENEVIEVE C. MORRISON.

PHARMACEUTICAL LEGISLATIVE AXIOMS.

All legislation is the result of compromise.

One good man elected to the legislature is worth a hundred spell-binders acting on association committees.

Remember the Stevens Bill yourself and don't let your congressional representatives forget it.

The Stevens Bill deals only with goods in interstate commerce.

The State of California must enact the same kind of law to give protection for goods manufactured in this state.

Where only two out of every 300 pharmacists in this state interest themselves in anti-cut-rate legislation the chain store will soon be the master and the individual independent druggist the slave.

A united pharmaceutical family will never fail. G. H. P. LICHTHARDT.

THE STEVENS BILL.

We are hearing much discussion and argument and are reading much literature favoring the national law known as the Stevens bill which was before the last session of Congress.

It would be rather interesting to know how many of the Pharmaceutical brethren of the State of California have read the Stevens bill and are familiar with its provisions.

This speculation has been aroused by the fight (?) and strenuous (?) effort made by the Pharmaceutical bodies of this state for a companion bill known as Gebharts A. B. No. 896 during the session of the legislature which has just been closed.

This proposed price maintenance legislation was written with the Stevens bill as a model and its provisions were not changed except in minor parts and in the wording nevertheless when the attention of the captains of the Pharmaceutical Ship of the Golden State was

called to the measure various objections were brought up, showing that they were not conversant with the proposed national law, and a course was set so as to avoid the desired land of milk and honey of price maintenance and the ship sailed for the enchanted harbor of unrestricted sales of paregoric and bichloride tablets.

If the officers had been familiar with the wording of the Stevens bill, and it was supposed that they were for they sent an endorsement of the proposed measure to Washington, they could have seen that the Gebhart bill was the same and would do for the small independent merchant of this state what the national law would do for goods in interstate commerce and if they had not strained at the paregoric gnat and swallowed the cut-rate camel the opposition maintained by the chain stores against price maintenance would have been beaten down and we today would have had the right to say at what price goods of our manufacture under special brand or trade mark should be sold.

Again, just think of strength that would be given to the arguments in favor of the Stevens bill if we could show Congress that already the progressive State of California has passed such a law for the protection of the manufacturer, the public and the small independent business man.

G. H. P. LICHTHARDT.

FAITH.

The winds that o'er my ocean run
Reach through all worlds beyond the sun;
Through life and death, through fate,
through time,
Grand breaths of God they sweep sublime.

Eternal trades, they cannot veer,
And, blowing, teach us how to steer;
And well for him whose joy, whose
care,
Is but to keep before them fair.

O thou God's mariner, heart of mine!
Spread canvas to the airs divine!
Spread sail! and let thy fortune be
Forgotten in thy Destiny.

—D. A. Wasson.

MAN'S HISTORY AND PROGRESS REFLECTED BY SHOES.

Everyone should have a more than passing interest in shoes. Those whose interest is confined to an occasional visit to the man who sells the cheapest lose a great deal not only financially but intellectually.

Right here let me quote a few lines from Elbert Hubbard on the subject of "Shoes and Character":

"There are four primal necessities in life—only four.

"These are food, clothing, shelter—love.

"Shoes and hats are a part of our clothing. Also, they are secondary sexual manifestations, said Herbert Spencer. Spencer was a bachelor, and he knew.

"And as women's shoes get more beautiful, skirts grow narrow and short.

"Spiritless, dejected, whipped-out men advertise to the world their mental condition by their shoes.

"There is a wonderful story by Tolstoy about a shoemaker whose shop was in the basement. When this shoemaker looked up from his work, he saw the feet of the people as they passed. Seldom did he see their faces—just their feet.

"He judged them by their shoes, and his estimate was usually correct.

"Once he saw a man go by bare-foot. The shoemaker jumped up—but what's the use, read the story for yourself.

The title of the story is, "Where God Is, There Is Love."

"Read it, and when you do, think of me and breathe a prayer of gratitude for having been introduced to one of the little big things in literature.

"Shoes, sure, that's the subject!

"Hope, courage, animation, ambition, are mirrored in your shoes. Look to your pedals, Terese, to your pedals. Your feet feature the facts. Shoes are a telltale."

My main purpose in preparing this paper is to discuss the historical side of shoes and all sorts of footwear. Be-

fore taking up this phase of the subject, however, let me dwell a few moments upon the subject of shoes in their relation to health.

People who are indifferent to the question of shoes are often called upon to suffer dearly on account of their attitude in the matter.

Cheap shoes as a rule afford very little support to the arch of the foot and the result is a breakdown in this portion of the anatomy.

Ill-fitting shoes cause untold misery and suffering, often resulting in blood poison or nervous derangement of a serious character.

Let me call attention to one very important difference between the cheap shoes and those of a higher grade.

This is the method of attaching the soles.

In the first instance the sole is simply nailed on and there is great danger of injuring the foot by contact with sharp points left standing.

The better grade of shoe has the sole attached by a method of stitching on to a projecting piece of the inner sole—just outside of the area where the foot rests. In this way there are no rough places or tacks to cause discomfort or injury to the foot.

This method of attaching the outer sole is called the Goodyear Welt Process. Such shoes as the Hannan, Walkover, Regal and nearly all of the higher grade of shoes are made in this way. It is estimated that over 1200 factories in the United States are using the Goodyear Welt Process.

In passing let me call the attention of the reader to an article in the June issue of Good Housekeeping, written by Sarah Comstock.

She discusses the right and wrong way of walking, and shows quite convincingly that we should not "toe out," as this throws the weight of the body upon the arch of the foot causing it to break down. This will be quite a blow to many well meaning mothers and dancing teachers who are forever teaching young girls to "toe out."

One often wonders why it is so restful to stand on the outer edge of one foot. This no doubt takes a great strain off of the arch and in that way brings relief to the tired nerves and muscles involved.

The importance of being well shod is shown by a careful study of the work of the Health Commission which has been doing such splendid work in certain portions of the South.

This commission has made us all more or less familiar with the hook worm and the terrible havoc it has wrought in the lives of thousands of poor people in this region.

Here the question of shoes means the difference between a life of health and usefulness on the one hand and one of long drawn out misery and helplessness on the other.

It is a well-known fact that the hook worm finds its way into the intestines of its victims through the feet.* The "barefoot boy" in sections where sanitary conditions are bad soon loses his zest for "whistling tunes."

Don't fail to see the hook worm exhibit at the Panama-Pacific International Exposition. You will find it in the Educational Building.

Have you ever stopped to consider what danger may lurk in the ordinary every day act of wearing the same shoes in the home that have trampled all day through the dirty streets of the city?

The Japanese can teach us a lesson here. They wear clogs which are the most sanitary of all types of footwear.

When they wish to enter their living quarters they step out of these clogs and leave them on the outside, substituting a light sandal which is never worn out of doors.

The Chinese wear a most unsanitary type of shoe. The soles being built up of untold numbers of thin felt which absorb and retain the filth of the street. These same shoes are worn in the home.



Japanese Coolie Sandal

Now let us take up the question of shoes from the historical standpoint.

Probably the most unusual and striking of all the exhibits in the Palace of Education at the Exposition is built around the humble subject of shoes; a single visit to this exhibit, however, is sufficient to cause one to regard his shoe as no longer a humble thing but to look upon it with respect and wonder.

Here is shown by the United Shoe Machinery Company in the Massachusetts section of the building the development of the greatest of all Massachusetts industries from its incipency to the present day.

In large, glass, metal framed cases is shown a collection of footwear which have been worn by mankind and womankind, from the days of the primitive man to the spring of 1915 and from the deserts of Africa and the corners of Korea through the length and breadth of Europe, across the Atlantic to New England and even to the western plains—a circuit of all the world and a circuit of all the centuries in shoes. In all, three hundred and fifty specimens of footwear, long and assiduously collected by that company are on view, arranged so that "like



Turkish Bath Clogs

* Note—See "The Roundabout Route of the Hookworm," page 41, following.



Primitive Man

Greek Shepherd

Peasant—Middle Ages

shall stand by like," while countries and periods are left to take care of themselves. Thus in one case will be found clogs regardless of whence they came and when worn; another contains sabots; a third sandals; yet another high boots of all ages; and so onward to the crown of the whole collection, the Egyptian shoes—recently uncovered in the ruins of the City of Antinoe after being buried over sixteen hundred years. These last mentioned are in a wonderful state of preservation considering their age and they show us very clearly the types of shoes worn by Cleopatra and her contemporaries.

But this is not all, for arranged frieze-like over the cases is a remarkable series of water color paintings which were made by Dr. Josef Urban, the scenic artist and authority on costume at both the Boston Opera Company and the Metropolitan Opera Company of New York, by which may be seen the fantastic costumes which were worn at the period of the shoes in the cases.

From the first, man has needed a protection for his feet which were in the early ages his only means of transportation. It was necessary to guard them from the bruises of sharp stones, briars and stings of reptiles. This made the shoe one of his essential needs.

The dress of the upper part of the body has always been a matter of whim or fancy but it has taken centuries of development to give mankind the shoe he wears today for the covering of the foot has always been a serious problem.

From its primitive form the shoe has been a matter of constant change to conform to necessity, superstition and religious beliefs. The early Hebrew regarded the shoe as a symbol of possession which is evidenced by the statement in the Bible, "Over Edom will I cast my shoe," meaning I shall conquer Edom; the Romans thought it an omen of ill luck to put the left shoe on first; at an Anglo-Saxon wedding the shoe of the bride was passed to the bridegroom who tapped the maiden on the head with it to signify his future authority; not many years ago in England the old shoes of the bride were thrown after her to indicate that she had left her home for good; it was on the shoe of her child that the Italian mother placed a bow of red ribbon that the evil eye might be averted; and even today when a soldier has passed beyond it is his spurred riding boots that follow the flag-draped body to the grave, reversed in the stirrups as a symbol of defeat and overthrow. In early times soldiers did not wear designating uniforms as they do today. They dis-



16th Century Shoes

A Soldier's Shoe

Duck Bill Shoe, 1530

tinguished friend or foe by a token attached to the shoe, as shown above. Uniforms were not worn until the latter part of the 16th century.

Emerson once said that the man who makes a pair of shoes carpets the earth with leather. Wellington attributed his military successes very largely to the fact that his soldiers were the best shod in Europe; and it was no other than the famous Napoleon who said, "With bread and a good pair of shoes a man can march around the world."

It is now with a realization of the important part the shoe has played in history that we can turn our attention to the footwear collection and the accompanying paintings and look upon, first, the scantily clad primitive man wearing sandals crudely cut from the skin of a beast he had killed and while it was still warm and supple was wrapped around the foot and ankle and fastened by means of the sinews of the animal; we see a Greek shepherd from Mount Olympus in a similar sandal and a peasant of the Middle Ages wearing foot covering but slightly in advance; the American Redman is there with his beaded and quilled moccasins; Korean and Japanese coolies are shown in the cheapest of all footwear, their straw sandal costing but a quarter of a cent a pair. Here is a

lady of Japan in her beautifully colored, flowing, silk kimono and wearing high clogs which, regardless of their beauty, must be left outside the door, never to be worn in the cleanly little homes; we catch a glimpse of the Greek actor mounted on his thick-soled "Kothurne," which gave him a huge and imposing appearance and the Roman legionary soldier in his spiked sole "Caliga," and there is the sun-browned African warrior in his sandals having almost the enormous width of a snow shoe that he might tread the sand with ease. The Mohammedan of northern Africa is also shown in his highly decorated sandals vividly colored with green, which color when worn on the foot covering indicates the accomplishment of his pilgrimage to Mecca and according to his belief he is then a holy man. We find the modern Greek garbed in his fantastic national dress of ballet type and wearing a moccasin-like



North African Sandal



Two 17th Century Shoes, with extended quarters and buckles, Black Forest District, Germany

"Opanka," having a large woolen tuft at the toe. Look at the Nomad of Amur clad in his furs and high seal-skin boots which protect him from the



Chinese Mandarin Boot.

cold and snow and then see a Polish nobleman of the eighteenth century in his beautifully embroidered high boots; but we must hurry past the Chinese mandarin, with a feather in his cap and the soles of whose shoes are composed of thousands of layers of very thin felt, and look at the interesting types of European footwear, the pointed toed "Poulaine," worn by the dandy of the fifteenth century, at first moss tucked in the toe was sufficient to keep it pointed heavenward but it finally became so long in answer to the dictates of fashion that even wax would not hold it at the desired angle so it was fas-

tened to the knee by silver chains; the "Ciopini" of the Venetian lady which gave her the appearance of being nearly a foot taller than she really was but which necessitated an attendant being on each side of her; then the slashed toe "duck bill"; Wellington boots; "Jack" boots, which weighed forty pounds and were worn by postilions; the French fall boots of the Massachusetts Puritan, and the romantic "heart shoes" of the German peasant bride; the picturesque Dutch children in their immense wooden sabots—and many many more even to the beautiful Ameri-



Ajuti worn in India

can debutant in her dainty tango slippers—but you must surely see them yourselves.

It is safe to say there is nothing—even in the famous museums—quite like it in the world. H. C. TOWLE.

David R. Holmes, assistant manager of the Sydney, Australia, branch of Parke, Davis & Co., was recently called to Detroit on account of the serious illness of his father. He expects to remain for about three months. His wife accompanied him.

THE ROUNDABOUT ROUTE OF THE HOOKWORM.

The source of every case of hookworm disease is eggs of the parasite in the feces of infected people.

Young worms hatch from these and after four or five days become encysted and infectious.

These can gain entrance to the body through the mouth, on dirty hands, in food and water, or through the skin in any way in which the infected material comes in contact with it, chiefly as a result of going barefooted; possibly also infection through wet shoes.

The fact that one or many attacks of ground itch is a part of the life history of almost every boy living in an infected locality, whereas those from non-infected localities do not know what the disease is; that experimental hookworm infection through the skin produces lesions identically like ground itch; and the further fact that in infected localities the skin is almost daily exposed to soil and water polluted with human excreta, whereas drinking water and food are far less exposed, all indicate that skin infection is the practical and almost the only one that actually occurs.

The worms penetrate the skin chiefly through the hair follicles and sweat pores, enter the blood stream, pass through the right heart to the lungs, into the bronchi, thence to the mouth and now are swallowed, pass through the stomach to the small intestine, where they attach themselves to the mucous membrane and develop to adult life.—Monthly Bulletin, Indiana State Board of Health.

A Kentucky colonel of the old school had made a proud boast that he hadn't drunk a glass of water in twenty years. One day as he was riding to Nashville on the old L. & N., the train was wrecked while crossing a bridge and plunged into the river. They pulled the colonel out with a boat-hook, and when they got him on shore one of his friends rushed up, crying: "Colonel! Are you hurt?"

"No!" he snorted. "Never swallowed a damn drop!"

Nutrition For Animals and Man.

By M. E. JAFFA, Professor of Nutrition in the University of California and Director of the Pure Food and Drug Laboratory of the State Board of Health.

The fundamental principles of nutrition are the same for man and animals.

Food is material which when taken into the body either builds tissue or yields heat and energy.

Foods are classified roughly according to these two uses.

If protein is neglected, growth is limited or delayed, repair checked, and resistance to disease lessened.

An excessive amount of protein is uneconomical, both physiologically and financially.

Carbohydrate food gives bulk to the diet and insures an economical use of the protein.

Fat supplies heat and energy in a more concentrated form than carbohydrates and prevents an excess of bulk.

The modern standard for a ration must meet all needs of the body, maintain it in perfect health and at the highest level of efficiency.

An economical ration provides for all these needs at the least cost.

In a scientific ration the measure of the food fits the measure of the body.

The measure of the food is its nutritive value (expressed as protein fat, carbohydrates, etc.)

The measure of the body is its size, its rate of growth, and the work it performs.

The nutritive value is the only comparative gauge of the real money value of the foods.

A balanced ration must contain the proper proportion both of the food classes and of the bulky and concentrated foods.

Protein foods are more expensive than others, in all the markets of the world.

Fresh vegetables, fruits, greens, etc., are worth more than dried foods.

All food should be fresh, sound, and clean.

Food should be purchased under pure-food guarantees.



INTERESTING EXHIBITS FOR DRUGGISTS AT THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION.

Are the exhibits of drugs and druggists' specialties at the Panama-Pacific International Exposition interesting the visiting druggist?

Decidedly.

The exhibits of goods handled and sold by the drug trade cover nearly one-sixth of the floor space of the huge Palace of Liberal Arts. With the other palaces may be found many of the specialties handled as side lines by the same business and if nothing more, the visiting druggist will gather valuable data on salesmanship by devoting a bit of attention to these displays.

The visiting druggist finds himself in the position of the layman, for as he proceeds through the little streets and avenues of the palace he is surrounded on all sides by a pretty array of booths, and in each is usually found a young woman who is demonstrating a drug or toilet article. After demonstrating an attempt may be made to make a sale of the article. Some of the exhibitors are content with merely explaining their goods and sales are not made.

This proves interesting to the visitor who now has an opportunity to see the methods used for the sale of the goods and it is more than possible that he may pick up a few new stunts that will assist in the sale of goods when he returns to his home town.

One now pauses at the booth of the

F. W. Fitch Company, one of the most artistic exhibits in the building. The attendant in charge calls the attention of the public to dandruff removers, hair tonics, shaving cream and other toilet articles in a convincing manner and you are tempted to lay in a stock of the Fitch goods simply because the demonstrator knows his business.

You continue but proceed but a few feet before a persuasive young woman drawls forth the virtues of the De Crai reversible tooth brush and a tooth paste of the same name. You begin to explain that you do not use tooth brushes and pastes as much as you sell them. Then you are lost. The demonstrator immediately proceeds to tell you a thousand reasons why these articles should be placed on sale in your establishment. She is so convincing that you will likely leave the place with a brush in one pocket and the paste in another, and mentally resolved to lay in a fair sized stock of both when you get home.

You pause to watch an attendant at the booth of the Solvay Process Company, soften water with one of their products. This concern exhibits the various brands of soda from the soda ash to caustic soda and lime stone. Some of the experiments are interesting and you proceed with the determination to "some time in the future" show a few of the methods as a window display.

You now pass a booth where the partially deaf man stopping at your hotel is testing the qualities of the Lorgnette-

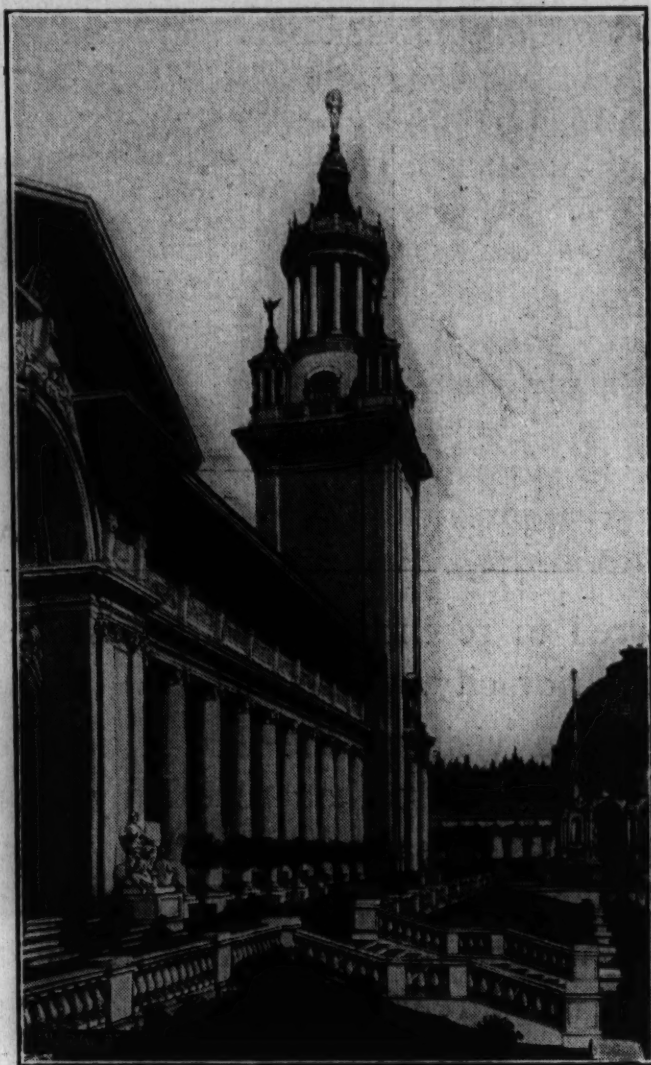
Phone. That he can hear is evident from the broad and happy smile and then you pass on to the exhibit of the S. B. Penick Company. Here you see a sample of about every root, herb and other crude drug in existence. You could remain here for an hour and improve every moment of the stay. You are in town for a few days only, time is short, so you hasten along.

Here is something interesting. The Radio Rem. This apparatus, which consists of glass bottles, each containing a terra cotta tube, made by mixing insoluble radium sulphate with clay and firing the tube in a furnace, will, according to the demonstrator, charge water with radic-activity by the simple expedient of pouring the fluid over the tube. This exhibit attracts considerable attention.

In the Citrus Cream exhibit you see whole lemons thrown into a machine and there issues forth a thick and creamy ooze. This is the cream manufactured by the Laughlin Fruit Refining Company as a toilet article. The demonstrator tells you all about the process and nearly succeeds in selling you a sample.

As you proceed you begin to believe that nearly all of the exhibits likely to interest you consists of toilet and sanitary articles. You are right. The manufacturers of these commodities are in the majority. The Sanitol Company is here with a splendid representation of tooth and toilet articles. The Roseen Toilet Company is also well represented and the young woman in charge coats her hand with a preparation frequently and is always anxious that the visitor try a sample.

Camelline face powder may also appeal to you but you pass on to the booth of the California Perfume Company. The demonstrator in charge here knows her business; also the perfume business. She knows the processes employed in the manufacture of perfumes and creams; has numerous photographs and exhibits of the same, and even the layman will know a few things about this business in a few minutes. The educational features of this exhibit de-



serve mention, for there are but few persons who know anything about the processes of manufacture in the perfume business.

And we must not forget to mention that one of the big booths is filled with the exhibit of the Vermilax dog remedies. The expert in charge knows all about the canines and their peculiar ailments and has a full line of the drugs needed to handle each peculiar case.

The druggist visiting San Francisco should not neglect to visit the Palace of Manufacture and also of Varied Industries. In each of these huge buildings he will find an array of articles which may be handled as specialties on his counters at home. Splendid exhibits of rubber goods may be seen and also of stationery.

The Eastman and Ansco Companies have splendid exhibits of the kodaks and cameras in the Liberal Arts Palace. New stunts are used by both concerns to attract the attention of the visitors that will prove interesting.

There is no question about the educational value of the Exposition to all classes of business men. Whatever their line may be, it is certain that a visit to the great \$50,000,000 celebration will prove a benefit. This phase was



Auditorium

referred to recently by a druggist from an interior city, who said:

"If the visit to the Exposition has done nothing else than reveal my shortcomings as a salesman, it has accomplished wonders. I tramped through the exhibition palaces; it was in the capacity of purchaser—just the average customer. Certain articles and the manner of presenting them impressed themselves upon me at once. Others did not



Court of the Universe

seem to possess any merit. And strange to say, the latter are the very class of goods that remain on my shelves at home. I have learned to gauge the value of goods by looking at them from the customer's side of the counter. That alone has well justified the visit to the Exposition."

Part-Time Course for Apprentice Pharmacists.

From February 1, 1915, the Chicago public high schools offer a four-year course to be known as the pharmacy preparatory course. It is offered in accordance with the recommendation of the Chicago Retail Druggists' Association, through its executive board, and is intended primarily to assist boys who are employed in drug stores as apprentices in pharmacy to acquire a sufficient number of credits to gain admittance to the schools of pharmacy.

UNCLE SAM'S DEPARTMENT OF WONDERLAND AT THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION.

Do you know that Uncle Sam has created a wonderland where you may observe a grain of sand assume the proportions of a mountain; an inch expand into a mile; an unappreciable zephyr attain the velocity of a howling gale; the footfall of a tiny fly thunder forth like the tread of a draft horse; the heat of a candle expand into that of a roaring furnace, the cheer and comfort of a cozy home-fire emanate the unperceived warmth of a distant star and the gentle pressure of a finger develop into the force of mighty giants?

The probabilities are that you know nothing of this little advertised department of our efficient government, but if you happen to be included among the fortunate ones who visit the Panama-Pacific International Exposition at San Francisco, a welcome is waiting—especially if you are included among the curious ones, who never hesitate to request information when something looms up.

To the average person, a visit to a laboratory is anything but interesting. The apparatus of the scientist fails to appeal because there is apparently but little romance attached to the curious contrivances utilized for all sorts of purposes and you pass on and decide that the laboratory is not intended for the reception of the ordinary citizen. You usually associate the ancient and gray-bearded centurian as the custodian of the mysterious chamber and believe that the layman may as well walk along the pathway of prosaic affairs in the world of business and pleasure.

Uncle Sam, however, does not share this opinion. On the contrary, he is anxious to take all of his nephews and nieces into his confidence and extends a cordial welcome to all to hasten into the vast Palace of Liberal Arts and for an hour or two—or for an entire day if possible—become his guest within the booth containing the exhibit representing the Bureau of Stan-

dards, which not only stands between the American people and the short weight and measure, but also is laboring day in and day out to promote all branches of science.

It has been declared that the science of tomorrow will have to be largely based upon investigations that carry the investigator beyond the sixth decimal point; in other words, that the future science will have to be based upon an adaption of scientific fact to human need, even if it involves the measurement of a millionth of an inch, the millionth part of an ounce or the millionth part of a degree of temperature. If requesting an opinion from one of the experts in charge of this fascinating exhibit he will probably tell you that aside from the work of protecting the people from false measures, the real purpose of the bureau is to refine the yardsticks of science.

All of the instruments and appliances utilized by the bureau have not been brought across the continent from Washington to demonstrate the usefulness of this new branch of the government's activities. In fact, it would require a huge building to house the duplications of the instruments and machines of the bureau; but as it is there are so many exhibits in this wonderland that even a slight summing up conveys to the mind of the visitor, staggering totals achieved by these modern scientists.

For instance, it was not practical to bring to San Francisco and the Exposition the huge testing machines used to tear apart the strongest steel girders used in building bridges and skyscrapers or if necessary utilize the same machine to crush an egg, and in each instance record accurately the foot pounds or fractions of ounces of resistance. Several of the beams and girders are at hand, however, and photographs of the machines indicate how the work is accomplished.

As you view the twisted girders you become interested and the moment you request a bit of information from one of the wide-awake experts sent to the Exposition by the government, you sense somehow that these young men are only too anxious to explain the work of the department; also anxious to display every sample of tested material, and more than anxious to initiate you into the mysteries of science, which after all need not remain a thing of mystery, because science and the application, is, after all, quite the simplest thing possible.

Remarkable beyond measure to one is the heat measuring instruments which register infinitesimal fluctuations of tempera-

ture, a ray of light may have started ten years ago from some distant star, and may have spent all of those ten years to reach the earth; and yet when the ray of light falls upon the sensitive bolometers operated by the Bureau of Standards, they will tell the observer the amount of heat that ray from the start brought with it to the earth. A small electrical furnace capable of generating a heat intense enough to melt the most refractory metal is seen as is also an apparatus which will measure cold great enough to liquify the very air we breathe, and heat of the greatest temperature.

The expert will show you a bit of pure sugar—not the commercial kind you purchase for six cents per pound—but so pure that it is used to determine all standards. It costs you \$15 per pound. The price seems high, but it is not, for it cost the government more than this. It is found that the most perfect test of sugar is an optical one and the amount of impurity is found by watching a deflected ray of light pass through it. Samples of sugar are sent daily by the customs officers at the various ports of entry for check analysis and in this way uniformity of analysis at the customs houses all over the country is secured.

In testing sugar we ascertain the percentage of pure sucrose contained therein. This is accomplished by polarimetric estimation, using 26 grams dissolved in enough water to make 100 c.c. fill a 200 m. m. tube.

The reading should be 100° if it is pure, as degree of variation is figured to percentage. Temperature also must be taken into consideration, and a control plate employed which has been standardized to the instrument that is being used for the test.

Raw or partly refined sugars need clarifying by precipitating the coloring matter with a solution of subacetate of lead and filtering before polarization.

The visitor enters a darkened section of the exhibit and there sees a remarkable device with which one can perceive the slight bending of a massive steel bar, three feet long and three and one-half inches in diameter. This bar is supported at each end and a small mirror is fixed at the center; above is a frame bearing another partially silvered mirror. Both mirrors reflect the light of a sodium burner, the lower glass showing a series of black and yellow concentric rings. The slightest pressure on the bar causes these circles to expand outward, forming as it were a series of ripples like those made by a stone dropped into a pond. The

pressure of one finger on the bar causes the formation of five or six new rings. This indicates that the bar has been bent about 1-20,000th of an inch, as each new circle means a movement of 1-100,000th of an inch.

Perhaps the department of weights and measures has the greater interest for the layman. Here one may see the fundamental standards on which all measures of weight and length depend. Copies may be seen of the originals kept at Washington, under double glass cases in fire-proof safety vaults and these originals are never disturbed unless it is to check the copies that have been adopted as working standards.

The weights tested by the Bureau range from those used by the city and state scalers in testing weights and measures of commerce down to those used by scientists in a most precise and exacting work. To do such testing as this the very finest instruments are needed and weight which vary from great masses as big as steamer trunks down to tiny atoms are used, some of the latter appearing small when compared to the head of a pin.

On one of the balances the weighing is made in a vacuum so that the weight and buoyancy of the air will not interfere with the result. Another balance is so sensitive that it can detect the difference due to diminution of the earth's attraction. The following experiment is made: Two kilograms were weighed side by side, then one kilogram was placed on top of the other and was thus elevated about two inches. It was found that the weight was 0.016 millograms less than when they were placed side by side. The precision of this instrument can be appreciated by this experiment for it shows that it can weigh down to 1-100,000,000th of the whole.

The expert in charge of the booth will tell you that some of these balances are so delicate that the heat of the operator's body near them would cause a disturbance, and the adjustment is affected by rods and other ingenious mechanisms which change the weights from pan to pan or add the finer V-shaped weights to the cross beam to affect a perfect balance. The operator stands at a distance of 100 feet and reads the results through a telescope.

A balance used in the volta meter work is so delicately adjusted and sensitive to changes of temperature that the operator cannot even remain in the same room with it. It is kept in a room guarded by double doors, in which a constant temperature is preserved. The rods by which it is con-

trolled reach through double glass panels into a second room which is also at an even temperature and guarded by double doors. The attention of the visitor is called to an exhibit of portions of sections of steel rails, the faulty construction of which has been responsible for railroad wrecks. These sections have been sent to the Bureau by the railroad companies and the Bureau is seeking to discover a new method of testing railroad equipment.

At present when a rail or other piece of iron or steel is tested it is destroyed in the process and becomes useless. Often a rail is full of flaws when it leaves the foundry, but up to this time no means of discovering this exists, and it is only after the faulty construction may have resulted in a disaster that the fault is discovered. The experts of the Bureau hope to evolve a process that will determine the existence of faults in metal construction before the material is put in use. If they succeed in accomplishing this the discovery will result annually in the saving of millions of dollars and many human lives.

The woman visitor will find an interesting exhibit in the textile division, where samples of silk and cloth are displayed. Through a process of its own the Bureau can now detect the presence of adulterants when these are used in the manufacture of cloth. For instance, tin and tungsten salts are used to give brilliancy and body to silk; in some black silk as much as 40 per cent is used. It has been ascertained that in some instances "woolen cloth" supposed to be 100 per cent pure, contains more than 50 per cent cotton.

When it is considered that the Bureau of Standards did not come into existence until 1901, the amount of work performed is remarkable. During the period of 1909 to 1913 the Bureau undertook to test some of the commercial weights and measures of the country, and the revelations made thereby were startling. It was found that forty-four out of every one hundred scales tested were incorrect—nearly one-half of the dry measures and nearly one-fourth of the liquid measures. It has been estimated by the department that the total loss to the people of the United States as a result of this inaccuracy of weights and measures would suffice to build not less than ten of the biggest battleships afloat each year. When the investigation started there were only four states in the Union which had efficient systems of inspecting weights and measures. Such were the revelations that today twenty-four states and most of the important cities of the country have adopted efficient inspection sys-

tems, and most of the other states are expected soon to fall into line.

In one section of the booth, are many milk jars, and other measures condemned because the capacity of each did not comply with the standard. Not long ago 100,000 milk jars were condemned for short measures by the sealers of a certain state. Legislation was enacted and the milk jars were condemned. It seems that false measures have a habit of running away from progressive laws. These jars were hastily collected and sent to another state where the laws were more lax. Here they were overtaken by a similar fate and were hurried off to a new locality, and at last account the jars were still traveling.

Stores of the exhibits of the Bureau are the nature closely associated with the domestic and moral welfare of every visitor. For instance, each household is supplied with water, gas and electricity, which is measured by meters before entering the premises. It is a simple matter for the Bureau to accurately determine whether the meter registers correctly. Appliances may be seen that are used to make these tests, and every public service corporation of the United States now depends upon the Bureau to provide accurate tests for this purpose. Thus it may be seen that the government desires that the standardization now being brought into existence shall effect all branches of industry.

The bureau has become a recognized and necessary institution. It provides exact data that may be used as a basis of comparison and has provided a method of measurement more exact than was believed possible only a few years ago. Its work has made possible the most impossible of feats. The accomplishments of the Bureau are intensely interesting and may be thoroughly understood by the visitor who knows little or nothing of science provided he is willing to learn. The expert detailed from Washington are anxious to impart all the information in their possession and are never so happy as when the visitor deluges them with questions. To visit the Exposition and not investigate the wonders of the Bureau of Standards, means that the visitor has overlooked the opportunity of a lifetime to secure at first hand a remarkable and interesting education along vital lines.

MY RECTOR.

I never see my rector's eyes;
He hides their light divine;
For when he prays he shuts his own,
And when he preaches, mine.

ADVANCE IN SCIENCE FEATURED IN LIBERAL ARTS PALACE AT THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION.

Easily one of the popular buildings at the Panama-Pacific International Exposition is the Palace of Liberal Arts, where are featured particularly those things of modern scientific progress. A particular feature of the exhibits in this palace, and one of very great contemporaneous interest, is the long distance telephone where messages daily are exchanged between San Francisco and New York. This is in the booth of the American Bell Telephone Company. Wireless telephony and wireless telegraph, two of the wonders of the past decade, are included in this department.

The range of subjects covered by the Liberal Arts sections includes such varied matters as photography in colors, as shown by the Eastman Kodak Company. This is the first time that any public exhibition has been made of direct photography in colors, the processes shown being the result of fifteen years of experimentation in the Eastman laboratories and the expenditure of hundreds of thousands of dollars. Affording a very sharp contrast to this marvel of esthetic creation is an adjoining booth of utilitarian worth where are shown artificial limbs, so skilfully constructed as to give to the wearer the action of life. Such an advance has been made in the manufacture of these artificial members that the wearer has almost as full use of fingers and toes as though in enjoyment of the parts nature has equipped him with. The development of the machines of precision—the typewriter, adding machine and projectograph—is shown by many exhibits. In this department is also shown the new illustrated map, originated with the idea of simplifying the study of geography.

Where there are nearly four hundred separate exhibitors, it is practically an impossibility, in a brief article, to give even a perspective view of all. For instance, there are thirty-eight separate exhibitors in the typographical group; fifty exhibitors of books and publications; forty of chemical and pharmacal arts; fifty-six of civil and military engineering; thirty-four of medicine and surgery; fourteen of photography; twenty-four of musical instruments; twenty-two of instruments of precision, and dozens of other smaller groups of various lines of activity and endeavor classified in this department.

The United States Government, in this palace, has made the largest exhibit made by the Government in any one department.

occupying one-fourth of the entire floor space of the palace. The workings are shown of the Department of State, Department of the Treasury, Department of War, Navy, Interior, Commerce, Civil Service Commission, Commission of Fine Arts, the American National Red Cross, the Library of Congress and the Smithsonian Institute. In addition to these, the Netherlands, New Zealand and Portugal are represented in this department by very complete and elaborate displays.

Listed among the working exhibits of the Liberal Arts department is the famous model of the Panama Canal on the amusement Zone. This reproduces with faithful detail every square mile of the Canal Zone. The canal is shown in actual operation, ships traveling back and forth through the Gatun locks, Miraflores locks, and through the famous Culebra cut, to reach their destination at Colon or Panama and then to take their course over the oceans to the ports of the world.

Listed with the working exhibits of this department is also the fifty thousand dollar pipe organ in Festival Hall. This has been a source of constant interest to exposition visitors, recitals being held on the organ by the world's most famous maestros, including such men as Edwin Lemare, of London; Wallace Sabin and Clarence Eddy.

Of the many inventions listed in the Palace of Liberal Arts, the one that is attracting a great share of attention, is the exhibits of color photography. The process is illustrated step by step, the methods that have been evolved by the Eastman people thus far, however, not being applicable to films. The work is confined to the limits of two color processes, red and green; but the results achieved within these limits are such as to excite profound attention and signalize a distinct step forward in photography. Another feature of this company's display is the new autographic apparatus by which the writing of an inscription is possible at the time the film is exposed. This feature, taken in conjunction with the initial work in color photography, contributes two very distinct phases of compelling attention in the photographic department of the Liberal Arts section.

On the opening day of the exposition, a message, received by long distance telephone from President Wilson at Washington, was transmitted to thousands of visitors on the grounds. This was made possible by the use of the acousticon, by which the slightest whisper is increased in volume so that it readily fills the largest hall. The acousticon is another exhibit

that serves to vary the general scope of displays in this palace. Its use with the deaf makes it a particularly valuable and noteworthy scientific attainment.

A one hundred thousand dollar typewriter is another novelty. This is exhibited by the Underwood people; weighs twenty-eight tons, is twenty-one feet wide, fifteen feet high and prints letters three inches in height. In the operation of the machine, the operator sits several feet forward of the large machine, employing the use of an ordinary Underwood which is connected in detail with the large machine. Pressing a key on the small machine, the large one will respond. The machine requires four electric motors in its operation.

This palace, containing as it does exhibits that have a more direct bearing on the daily lives of the visitors than those in any other palace, with the exception of Food Products, has been one of the most popular of the exhibit palaces since the opening of the exposition, and it is daily becoming even more popular.

Theodore Hardee, of wide experience in exposition work, is the chief to whom is to be given the high degree of credit for the interest and worth attaching to the exhibits of this Palace.

The red color on a woman's cheek may be due to one of three causes: a flush, a blush, or a blush.—J. F. S.

DREAMERS.

Ah, there be souls none understand,
Like clouds, they cannot touch the land,
Drive as they may by field or town.
Then we look wise at this and frown,
And we cry, "Fool!" and cry "Take hold
Of earth, and fashion gods of gold!"

Unanchored ships, that blow and blow,
Sail to and fro, and then go down
In unknown seas, that none shall know,
Without one ripple of renown;
Poor drifting dreamers, sailing by,
That seem to only live to die.

Call these not fools; the test of worth
Is not the hold you have on earth.
Lo there be gentlest souls, sea blown,
That know not any harbor known;
And it may be the reason is
They touch on fairer shores than this.

—Joaquin Miller.

ITEMS OF INTEREST

PREPARATION OF SPIRITUS AMMONIAE AROMATICUS.

(*Aromatic Spirit of Ammonia.*)

In accordance with many requests from druggists concerning the preparation and analysis of aromatic spirits of ammonia, it is thought best to here present the formula for preparation and method of analysis as used in the State Laboratory. This drug is made strictly in accordance with directions on page 416, Pharmacopœia of the United States, Eighth Decennial Revision.

Commenting on the formula, it should be said that the ammonium carbonate used, as well as the other ingredients, were in accordance with the data given under the respective title in the Pharmacopœia. Some question has been raised as to the ammonia water used in this connection. The ammonia water used is that indicated on page fifty of the Pharmacopœia, and not the strong ammonia water indicated on page fifty-one.

The method used in this laboratory for titrating the sample is as follows:

In a 300 c.c. Erlenmeyer flask is placed 50 c.c. of distilled water and four or five drops of paranitrophenol indicator added, after which 20 c.c. normal hydrochloric acid is added. The solution should be absolutely colorless. Ten c.c. of aromatic spirits of ammonia are then added by the means of an accurately graduated pipette, the ammonia being immediately delivered into the flask. The titration is then conducted with half normal sodium hydrate solution, the hydrate being added until a faint yellow color appears. The number of c.c. of sodium hydrate required to neutralize the acid is divided by two. The quotient so obtained is subtracted from the 20 c.c. of normal acid, representing the number of c.c. of acid required to neutralize the alkalinity of the ammonia solution. This number multiplied by the factor .01693 represents the alkalinity of the sample tested.

To neutralize the alkalinity of 100 c.c.

of aromatic spirits of ammonia, made strictly in accordance with the requirements of the Pharmacopœia, there should be required 116.4 c.c. of normal acid, representing 1.97 gms. of ammonia gas, which, therefore, is calculated at 100 per cent. If a sample analyzed showed only .985 gms., the sample tested would indicate 50 per cent. loss.

It may be said that the assay of the aromatic spirits of ammonia may also be made directly, viz., the solution of water, ammonia and indicator may be titrated with normal or half normal acid and the result would then be in c.c. of acid used. Such figure multiplied by the proper factor would give the alkalinity in terms of ammonia.—Bulletin, May, 1915, California Board of Health.

SAN FRANCISCO CHAMBER OF COMMERCE.

June 7, 1915.

To the Retail Merchants Affiliated with the Retail Trade Committee of the San Francisco Chamber of Commerce:

Certain new forms of trading stamps have been put on the market under various names. Men have been put in the field to make contracts with local retailers, and costly advertisements have been run in the newspapers advertising these schemes and defending them.

The average merchant pays to the trading stamp or coupon companies about $3\frac{1}{2}\%$ on his gross sales, which means that for the chance of increasing his business through giving stamps, coupons or metal checks, he is giving up about $3\frac{1}{2}\%$ on the business of his regular customers and his steady trade which he has built up very likely for years. Three and one-half per cent. on one's gross sales is a larger percentage than some of the great national advertisers pay for their entire advertising campaigns.

In the case of the average merchant, $3\frac{1}{2}\%$ on his gross sales would be equivalent to paying out from 30% to 40% of his net profits, provided those net profits amounted to approximately 10% of his gross sales. It would take a very great increase in business indeed

to warrant such an outlay on established business as well as the new increase in business.

The Retail Committee is opposed to trading stamps, coupons, trade checks and similar devices, particularly because we do not believe in the practice of appealing to the public on a something-for-nothing basis. The merchant who pays out $3\frac{1}{2}\%$ on his gross sales can not give as good value as the merchant who does not have to pay this tax, unless of course greatly increased business should result. We believe from the standpoint of the merchant and the public both that the giving of any saving direct to the customer in the form of a lower price is the best method. Where something is given for nothing, the public is inclined to become confused as to values.

The trading stamp companies have large expenses, and only a portion of what the merchant pays them for stamps ever gets back to the customer; the rest must go to pay the expense and profit of the trading stamp or coupon organizations.

Once a merchant adopts any of these devices it is difficult for him to drop them. We trust that any retail merchant affiliated with the Retail Trade Committee, who may be considering any of these schemes, will stop and figure the whole thing very carefully and, if necessary, seek the advice of the best merchants. Yours very truly,

GEO. Q. CHASE,

Chairman Retail Trade Committee.

MILLIONS FOR REINVESTMENT IN SAN FRANCISCO IN JULY.

San Francisco stock and bond houses report greatly improved interest in securities. The purchasing demand, they say, is not so brisk as the inquiry, but that demand is increasing.

It is believed that right after July 1, when upward of \$10,000,000 will be disbursed locally in payment of half-yearly coupons on bonds of California corporations, to say nothing of almost as much more to be disbursed in this state in the form of stock dividends, there will be a rush of buying such as the

local investment market has not enjoyed in a long time.

Nor is the approach of July thought to be the only reason for renewal of interest in securities of all classes. Citizens of this state, like those in other states, have been practicing economy on a scale never before known in the past, with the result that an unparalleled amount of savings is awaiting investment.

That the time is here RIGHT NOW for the reinvestment of idle funds is clearly indicated in the "Seven Reasons" given below.

GREAT U. S. PROSPERITY FORE- CASTED. SEVEN BIG REASONS FOR OPTIMISM.

Herewith are given some cogent reasons for optimism in the financial and business outlook of the United States:

1.—American national banks alone have surplus reserves of \$730,000,000, permitting of new credit expansion of more than \$3,000,000,000, while the surplus of the other 15,000 banking concerns is probably equally as large.

2.—Money rates are so low that it is virtually inevitable that enormous sums will be used in the security markets before long, causing prices of the most attractive securities to rise.

3.—The value of the United States harvests this year promise for the first time to exceed \$10,000,000,000, the spending of which can hardly fail to irrigate the country with prosperity, thus increasing the earning of railroads, equipment companies, steel corporations and business in general.

4.—For the fiscal year ending day after tomorrow the United States' balance of merchandise exports to foreign lands will exceed imports by fully \$1,000,000,000, a figure never before approached.

5.—Americans have been saving money as never before, and use must be found for it.

6.—Confidence has been restored between business and the administration and in gratifying degree between employers and employees.

7.—Business is improving throughout the United States.

NEWS ITEMS

BOARDS OF PHARMACY OF THE PACIFIC COAST AND ROCKY MOUNTAIN STATES.

- ALASKA—William Britt, President, Juneau; W. B. Kirk, Nome; William Ramsey, Council; W. H. Caswell, Valdez; E. V. Boyle, Cordova; F. M. Dunham and R. T. Kubon, Fairbanks; Floyd E. Ryus, Secretary, Ketchie Rau.
- ARIZONA—Fred Fleishman, President, Tucson, '16; J. A. Dines, Temple, '16; George Martin, Tucson, '16; William Malter, Flagstaff, '16; T. E. McCutcheon, Yuma, '16; A. G. Hulett, Secretary, Phoenix, '16.
- CALIFORNIA—J. O. McKown, President, Livermore, '13; H. O. Buker, Fresno, '13; E. T. Off, Pasadena, '13; George M. Sutherland, Alameda, '13; H. J. Finger, Santa Barbara, '13; J. S. O'Callaghan, '17; Louis Zeh, Secretary, San Francisco (not a member).
- COLORADO—W. F. Thebus, President, Denver, '17; D. Y. Butcher, Colorado Springs, '15; S. L. Bresler, Secretary, Denver, '13.
- IDAHO—C. O. Ballou, President, Boise, '14; J. J. Pulse, Grangeville, Vice-President, '15; T. M. Starrh, Secretary, Twin Falls, '13.
- MONTANA—F. A. Scheuber, President, Livingston; W. R. Montgomery, Secretary, Butte; Emil Starz, Treasurer, Helena.
- NEVADA—N. E. Wilson, President, Reno, '13; F. M. Clark, Ely, '13; W. A. Brown, Winnemucca, '13; R. L. Prouty, Tonopah, '13; J. M. Tabor, Secretary, Elko, '13.
- NEW MEXICO—E. G. Murphy, Las Vegas, President; B. Ruppe, Albuquerque, Secretary; G. S. Moore, Roswell, B. G. Dyne, Las Cruces; J. N. Zook, Santa Fe.
- OREGON—Leon B. Haskins, President, Medford; J. Lee Brown, Secretary, Marshfield; Bliss L. Darby, Treasurer, Glendale; Frank S. Ward, Salem; F. H. Caldwell, Portland.
- UTAH—J. L. Franken, President, Salt Lake, '13; W. L. Eddy, Brigham City, '15; John Culley, Ogden, '15; Alex. Hedquist, Provo, '13; W. H. Dayton, Secretary, Salt Lake, '14.
- WASHINGTON—Cornelius Osseward, President, Seattle, '14; Fred D. Marr, Tacoma, '15; A. F. Maxwell, Pullman, '16; V. T. McCroskey, Colfax, '17; D. B. Garrison, Secretary, Connell, '18.
- WYOMING—G. D. Sureton, Lusk, President; N. B. Bennett, Sheridan, Vice-President; R. A. Hopkins, Cheyenne, Secretary.

Information regarding Boards of other States and requirements for registration in all States furnished on request.

STATE ASSOCIATIONS OF PACIFIC COAST AND ROCKY MOUNTAIN STATES.

STATE	PRESIDENT	SECRETARY
Arizona	J. H. Barnett, Mesa.....	T. E. Thorpe, Phoenix.
California	Frank T. Green, San Francisco...	K. B. Bowerman, San Francisco.
Colorado	D. C. Taylor, Pueblo.....	Charles J. Clayton, Denver.
Idaho	B. B. Davis, Emmett.....	D. S. Whitehead, Boise.
Montana	J. C. H. Fitch, Kalispell.....	J. A. Riedel, Boulder.
New Mexico....	B. Ruppe, Albuquerque.....	Mrs. M. L. Powell, Aubuquerque.
Oregon	D. O. Woodworth, Albany.....	A. W. Allen, Portland.
Utah	A. R. McIntyre, Ogden.....	Charles Van Dyke, Salt Lake.
Washington	George H. Bartell, Seattle.....	D. C. Bartley, Seattle.

A TRIP TO MT. DIABLO.

From many a point in Central California the visit to the summit of Mt. Diablo has been brought within the scope of a single day's outing through the enterprise of the Oakland, Antioch & Eastern Railway, which is now operating two trains daily to Diablo, at the end of the Danville branch. Connection is made here with an automobile stage service that terminates at the highest peak in the Coast Range after winding over a scenic highway that commands some of the finest panoramas in California. Passengers from San Francisco may depart via the Key Route Ferry at 8:00 a. m., from Oakland at 8:30 a. m. or from any other portion of the system in time to connect with the train which leaves Saranap, on the Oakland, Antioch & Eastern, at 9:25 a. m. The summit of Mt. Diablo is reached at 11:15 a. m., an hour's stay is permitted, luncheon is served

at the Mt. Diablo Park Inn and the departure from Diablo by train is at 3:30 p. m., reaching Oakland at 5:00 p. m. and San Francisco at 5:35 p. m. A second trip to the mountain top is available for passengers leaving San Francisco at 1:00 p. m. On this schedule the return to San Francisco is at 7:50 p. m.

OWNERSHIP BY THE PEOPLE.

The progress of municipal ownership is concisely shown by the following statements of the steps taken either forward or backward by American cities during the year ending with April, 1915:

One hundred and eighty cities voted \$18,370,000 bonds for municipal water plants.

One hundred and thirteen cities voted \$11,978,000 bonds for municipal electric light plants.

DR. ABRAHAM L. LENGFELD.

The late Dr. Abraham L. Lengfeld was born in Auburn, New York, December 25, 1850, and came to California when barely a year old. At the age of fifteen years, he entered the employ of Rotturier, a well known French druggist at the corner of Dupont and Pacific streets. In 1871 he graduated from the medical department of the University of the Pacific, afterwards from the Cooper Medical College and then the medical department of the Leland Stanford Jr. University. He did not practice medicine, however; but early in 1872 opened a store on the corner of Geary and Stockton streets. In 1883 he was appointed professor of chemistry and materia medica in the medical department of the University of California and shortly afterwards received a like appointment in the newly founded dental department of the same university. He served until 1900, when he resigned.

He was chosen as one of the trustees of the California Pharmaceutical Society and the California College of Pharmacy when these two were consolidated in 1878. He was elected first vice-president in 1880 and resigned the following year. He contributed liberally to the college when Searby and Wenzell were trying to establish it on a sound financial basis and many of our old-time apothecaries will remember the papers which he read before the Pharmaceutical Society on "Repercolation," "Ethyl Iodide" and other kindred technical and scientific subjects.

He was a member of the Pharmacopoeia Convention in 1890, and a member and vice-president in the convention of 1900 and 1910.

"The soul's dark cottage, battered and decayed,
Lest in new light through chinks time
has made."

—Waller.

CALIFORNIA COLLEGE OF PHARMACY GRADUATES IN PHARMACY.**Class 1915.**

Joseph Abrams, I. W. Alexander, F. G. Artana, W. A. Baker, E. B. Bonham, L. G. Brosemer, J. W. Citron, C. Devenenzi, A. J. DeMartini, H. B. DuPee, G. G. Gaffney, P. Garibaldi, F. P. Guerra, R. L. Haslehurst, E. B. Huskinson, A. H. Jaegel, A. L. Jorgensen, C. E. Kratt, E. L. Lock, C. D. Lovotti, A. S. MacLean, Miss G. Morrison, J. L. Munson, E. L. Nelson, J. E. Ostrom, E. P. Peterson, W. A. Pickering, V. C. Quarataro, E. I. Randle, Fred Robinson, L. D. Robinson, L. Sabini, A. Smith, H. S. Stein, G. W. Tippet, O. Trewatha.

Directors scholarship for 1915-16 awarded to Leslie D. Robinson.

R. A. Clarke, Degree B. Ph.

Statement of Ownership, Management, Circulation, etc., Required by the Act of August 24, 1912.

Of The Pacific Pharmacist, published monthly at San Francisco, California, for April, 1915.

Editorial Staff, F. W. Searby, H. B. Carey, J. H. Dawson, R. E. White, all of San Francisco, California; Managing Editor, F. W. Searby, No. 723 Pacific Building, San Francisco, California; Business Manager, F. C. Smith, No. 723 Pacific Building, San Francisco, California; Publisher, The James H. Barry Co., 1122 Mission St., San Francisco, California; Owners, Galen Publishing Co., a corporation, F. W. Searby, No. 723 Pacific Building, San Francisco, California; Dr. H. B. Carey, No. 1294 Ninth Ave., San Francisco, California; Albert Schneider, No. 723 Pacific Building, San Francisco, California. Known bondholders, mortgages, and other security holders, holding 1 per cent. or more of total amount of bonds, mortgages, or other securities: none.

F. C. SMITH

Sworn to and subscribed before me this 10th day of April, 1915.

(Seal) JOHN L. MURPHY.

Notary Public in and for the City and County of San Francisco, State of California.

(My commission expires May 1, 1917.)

ADVANCED INSTRUCTION IN PHARMACY.

The Philadelphia College of Pharmacy has established a two-year course in pharmacy leading to the degree of Graduate in Pharmacy (Ph. G.), to begin September 20, 1915. Each year will extend over thirty-one weeks and cover at least 1500 hours of instruction, which is 25 per cent. more than the number of hours required by the American Conference. The entrance requirement is the completion of at least one year of high school instruction or its equivalent (15 counts).

The three-year course will be continued, leading to the degree of Doctor of Pharmacy (Phar. D.). Thirty-one weeks of instruction will be given each year. The entrance requirements for this course will be four years of completed high school work or its equivalent (60 counts). This course will embrace both laboratory work and didactic instruction of an advanced character with the laboratory work predominating.

In the two-year course, commercial pharmacy will be treated more extensively than heretofore. This college has conducted a compulsory course in this branch for fifteen years and many new features have been added to meet the demand from all parts of the country for a pharmacist with better business equipment.

In the professional education, the standard will not be relaxed.

In the third year, students will be given advanced instruction in analytical chemistry, pharmacognosy and botany, bacteriology, food analysis, manufacturing pharmacy, biological assays, jurisprudence, etc.

A course in chemistry and pharmacy, leading to the degree of Bachelor of Science in Chemistry and Pharmacy (B. Sc.) will extend over four years of thirty-one weeks each. The entrance requirements for this course are the same as for the degree of Doctor of Pharmacy and it includes advanced work in chemistry, technical microscopy, and bacteriology and is designed especially for the education of analysts and food and drug chemists.

AMERICAN PHARMACEUTICAL ASSOCIATION.

The Denver branch of the Association reports the following program of entertainment for members en route to San Francisco on the A. Ph. A. special train, which will leave Chicago at 11 p. m., July 29:

The train will be met on arrival in Denver at 7:20 a. m., Saturday, July 31, and members escorted to Albany Hotel where breakfast will be served and a few addresses made.

The party will then proceed by trolley to Golden, in the foothills of the Rockies; thence by automobile over a new and beautiful road to summit of Lookout Mountain, when a stop of several hours will be made and a box lunch served.

Returning the party will reach Denver at 4:30 p. m. in time to do a little sightseeing or shopping before the special train leaves for Colorado Springs at 7:45 p. m.

Advices from Salt Lake City report that a joint committee of the Utah Pharmaceutical Association and Salt Lake Retail Druggists' Association has been appointed to arrange for the entertainment of visitors upon the arrival of the A. Ph. A. special train in their city, details of which will be announced later.

PUBLICATIONS OF INTEREST TO THE DRUG INDUSTRY.

A list of Bureau of Standards publications of special interest to those engaged in the various lines of the drug industry is given below. These publications are distributed free upon request to the Bureau of Standards, Washington, D. C.

Circular No. 5, Testing of clinical thermometers; No. 9, Testing of glass volumetric apparatus; No. 16, the testing of hydrometers; No. 35, melting points of chemical elements; No. 45, the testing of materials; No. 47, units of weight and measure, definitions and tables of equivalents; international metric system chart and pamphlet.

MEETING OF THE S. F. BRANCH OF THE A. PH. A.

The San Francisco Branch of the American Pharmaceutical Association held its regular monthly meeting on the evening of June 8 in the office of THE PACIFIC PHARMACIST. The meeting was called to order by Vice-President Jennie M. White.

The members unanimously approved of the election of Mr. J. H. Dawson as local Secretary to succeed Dr. A. Schneider who had recently resigned. The tentative program of the sixty-third annual meeting of the A. Ph. A. was discussed and seemed to meet with approval.

Mr. J. L. Lengfeld presented a paper on "Tooth Powders and Tooth Pastes," in which he mentioned the various ingredients used in their manufacture, such as chalk, both precipitated and prepared, magnesia, kieselguhr and kaolin and emphasized the importance of using materials of highest quality. The paper was well received.

The latter part of the evening was taken up with an informal discussion on the latest rulings of the Harrison Narcotic bill. It was said that under Treasury decision 2194 such drugs as novocaine, anaesthesin, orthoform and even solution of quinine and urea hydrochloride would be considered as coming within the meaning of this law.

There being no further business the meeting adjourned to meet again on the evening of July 13, at 8 o'clock, 723 Pacific Building.

CLARISSA M. ROEHR, Secretary.

MEETING OF THE WOMEN'S PHARMACEUTICAL ASSOCIATION.

On Friday, May 28, the regular monthly meeting of the Women's Pharmaceutical Association was held at 233 Pacific Building. A paper on medicinal plants growing in the vicinity of Swayne, written by Miss Jakeman, was read. Dr. Margaret Mahoney addressed the members on the subject of "A Woman Pharmacist at the Children's Hospital"; that being one of the provisions of the constitution of that hos-

pital. A vote of thanks was tendered Dr. Mahoney for her interest in pharmacy.

At the June meeting the final arrangements for the Women Pharmacists of the A. Ph. A. will be made. All members are urged to attend.

"Oh, my!" exclaimed the excited woman who had mislaid her husband. "I'm looking for a small man with one eye."

"Well, ma'am," replied the polite shop-walker, "if he's a very small man maybe you'd better use both eyes."—Tit-Bits.

BOOK REVIEWS

Perfumes and Cosmetics: Their Preparation and Manufacture. A complete and practical treatise containing directions and formulas for making perfumes, smelling salts, sachets, fumigating pastils, cosmetics, hair dyes, tooth pastes, and all toilet preparations, including the use of synthetics. By William Askinson, Dr. Chem., Manufacturer of Perfumery. Translated from the German. Price \$5.00.

This book is interesting reading, and will be of value to the pharmacist who wishes to manufacture individual and elegant preparations. Chapters are devoted to the history of perfume—aromatic substances, odors from vegetable kingdom, aromatic vegetable substance and chemical products used in perfumery, essential oils also synthetic products are given much space. The formulas are practical and directions are given in a concise way.

A copy of this book is a valuable addition to the pharmacist's library.

We will print formulas from time to time. This month we give "Bay Rum."

Bay Rum—Oil Bay (from Myrcia acris), 240 grains; oil orange (bigarade), 16 grains; oil pimenta, 16 grains; alcohol, 1 quart; water, 25 fluid ounces.

Dissolve the oils in the alcohol and add the water. Mix the liquid with about two ounces of precipitated phosphate of lime and filter.

This preparation improves with age. Bay rum acts as a slight stimulant to the scalp, and is an agreeable dressing for the hair.

J. M. W.

The Ladies' Auxiliary of The California Pharmaceutical Association met at a card party at the home of Mrs. S. A. McDonnell, Wednesday evening, June 30, 1915. There were 28 present and a very enjoyable evening resulted.

PERSONALS AND TRADE ITEMS**LANGLEY & MICHAELS MONTHLY MARKET LETTER.**

Business Outlook: The very unusual May rains this year have without doubt caused material losses in early fruits and in some of the earlier alfalfa hay crops. On the other hand, range feed and late sown grain as well as summer grain field products have been greatly benefited, and the year could not be better for growing fruit trees. As is usual in almost any season some sections will report crops below normal while others will have an increase. It may be said, however, that according to all experience a wet spring is the harbinger of great harvests in the aggregate, and there is good reason to expect this to be one of our best crop years. As to prices, so far as deciduous fruits are concerned, they are not entirely satisfactory, though grain growers will doubtless do well. Further statistical evidence of improvement in business conditions is found in the record of commercial failures, which exhibit steady reduction month by month, and in May made the best showing of the year. From figures compiled by the State Comptroller the population in California is now put at 2,667,516, an increase of 239,967 over the Federal census of 1910. San Francisco is the eleventh largest city in population in the United States, the third in average capital in national banks, fifth in building construction, fifth in foreign imports, seventh in foreign exports, eighth in bank clearings, ninth in postal receipts. On June 25th the attendance at the exposition passed the seven million mark. This figure exceeds the attendance at any previous Exposition for a similar period. The last million was rolled up in sixteen days—on an average of more than 55,500 attendance a day. Transportation officials state that daily arrivals now average over 5,000, and bookings evidence this record will continue for many weeks.

Price Changes: Staple drugs lower in price since the last issue are few, Acetanilid now selling \$1 per lb., Buchu and Tinnev. Senna Leaves a trifle easier. The advances are many, among which may be included Quinine up 2c, Naphthaline 3c. All Tartars higher and Seidlitz Powders in consequence. Cod Liver Oil scarce and high. Lanum now selling \$1 per lb. Green Soap, Lac Sulphur, Saffron and German Wormseed higher. Antipyrine advanced 50c per lb. and Epsom Salts ½c in bbls. All Mercurials higher. Glycerine marked up 1c—heavy shortage reported. Potash is still further advancing, particularly Permangan-

ate and Red and Yellow Bruciate. Saltpetre higher. Sage, Doggrass, Russian and Hungarian Chamomile, Red Rose Leaves, Oxalic Acid all advanced. Little change is noted in the Oils. Peppermint lower, Artificial Oil Wintergreen, as well as all derivatives of Carbolic Acid advancing steadily.

California Ph. Assn.: Don't fail to attend this year's meeting in San Francisco August 6-7. The various National affiliated associations convening here at some time will add unusual interest to this year's convention. The committees are working energetically to the end that there will be much of instruction and entertainment for the delegates, and without doubt there will be present the largest attendance of any heretofore held. Your presence is needed to add to the success of this convention.

Narcotic Blanks—Important: Some druggists are put to considerable inconvenience and delay having their order blanks returned to them on account of not properly writing them. Each blank must be dated and signed. The signature must correspond with the name to whom registry was issued. The business or profession must be filled in space provided. No order verbal, telegraph, telephone or otherwise can be shipped until the blank form is in our hands. The Department requires a strict compliance with the law. We cannot make alterations or additions to the blank you send us, and as our files are open to inspection, and as we are held to a strict accountability, the importance of your attention to the above is obvious.

Narcotic Decisions: In the event of loss of Narcotic drugs through theft it is necessary for the registered person to make report under oath, setting forth the facts and circumstances relating thereto and file the original of this affidavit with his inventory which was taken on March 1st, and forward a duplicate to the district Collector of Internal Revenue. In the case of the sale of a store, and assuming that both parties are registered under the law, any unused Narcotic order forms in the possession of the original owner will become null and void as does the privilege of making use of the registry number indicated thereon, and these forms must be surrendered to the district Collector of Internal Revenue. If the original owner, however, desires to transfer the unused forms to the purchaser, this may be done through presenting them to the Collector for over-printing with the new name and

registry number. Narcotic order forms are not redeemable nor are registry numbers transferable from one to another. In making the transfer of stock the purchaser will present to the original owner an official order form indicating the Narcotics bought. The former owner will attach this to his original inventory thus showing the legal disposition of his stock. The purchaser will then have in his possession the duplicate order form which he should attach to the inventory he takes at the time the stock is transferred and which he will keep on file for a period of two years.

BE READY TO SUPPLY THEM.

Parke, Davis & Co. have inaugurated an aggressive advertising and detailing campaign among physicians in the interest of their Germicidal Soap and Ether. These products, as every druggist knows, are highly esteemed by the medical profession, and the present promotion work, which is country-wide in extent, should materially increase the demand for them.

Germicidal Soap, P. D. & Co., it may be mentioned incidentally, has a considerable variety of uses. As an antiseptic and disinfectant it is a valuable agent in obstetrics and gynecology, in surgery, and in general practice. Physicians recommend it in the home for cleansing minor wounds where there is danger of infection, as a deodorant in offensive perspiration, for cleansing the scalp and checking dandruff, for treating boils and acne, for vaginal douches, and for ridding household pets of lice and fleas.

In medical advertisements Parke, Davis & Co. are calling attention to the improvement in their ether container with dropper-tube attachment. This improvement consists of the addition of a corked opening. The physician can continue to use the bent dropper-tube, which when cut permits the entry of air in one section and the ether to flow from the other, or he can use the corked opening. The new container appears to meet every possible demand.

"American Oil": What It Is.

Pharmacists receiving for the first time a prescription for "American Oil" may be puzzled for the moment to know just what is meant. Here, then, is the explanation: American Oil is a heavy liquid petrolatum which is being supplied by Parke, Davis & Co. It is distilled from American petroleum and is colorless, odorless and tasteless. For internal administration, for which use it is intended, it is pronounced fully equal if not superior to the best Russian Oil formerly imported. It is re-

markably high in viscosity and lubricating power and is free from sulphur compounds, acids, alkalies and all harmful by-products.

American Oil, P. D. & Co., is certain to come into extensive use in the treatment of constipation. It is not a laxative in the generally accepted sense of the term, but an intestinal lubricant. It mingles with the food in the stomach and passes unchanged into the intestine, where it permeates the feces, inducing healthy, normal evacuation.

On Wednesday, June 9, the Detroit Board of Commerce entertained the delegates to the Pan-American Financial Conference held in Washington recently, the meeting at the capital being followed by a tour of some of the principal cities of the country. The party was headed by Assistant Secretary of the Treasury Andrew J. Peters and embraced leading financiers and business men of eleven Latin-American republics. While in Detroit the distinguished visitors inspected the pharmaceutical and biological laboratories of Parke, Davis & Co.

Among recent visitors to the Detroit laboratories of Parke, Davis & Co., were three hundred alumni of the Detroit College of Medicine who were in the city for a week of lectures and clinical work. The visit was featured by a number of special demonstrations in research work and an exposition of some recent advances in methods of diagnosis and treatment. Other visiting parties included students from the Buffalo College of Pharmacy, the Pittsburg College of Pharmacy, the medical department of the University of Michigan, the Detroit College of Medicine, and the pharmacy department of the Detroit Technical Institute.

Professor F. W. Nish writes to Dr. H. M. Simmons from San Bernardino that he has completely recovered from his recent illness and will return to the college in September and resume his position as professor of pharmacy.

W. P. Pope has just moved into a handsome new store designed by, and built expressly for him, at Main street and San Pablo avenue, Albany. When the interior decorations and arrangements are finally completed he will have one of the most attractive of the east bay drug stores, in the center of a rapidly developing section.

R. F. SANFORD

OFFICIAL PHOTOGRAPHER

— for —

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FOR TWO PERSONS OCCUPYING ROOM TOGETHER \$68.00

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Delicious Breakfast and Luxurious Room with Private Bath for Seven Days at First Class Down Town Hotel, or Room and Board, American Plan all Meals included at Exposition Inn, corner of California and Pierce Streets. Large, light, airy rooms, with detached bath, for seven days.

Automobile transportation to and from depot or ferry at San Francisco, including hand baggage, one trunk carried to and from depot or ferry.

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Object of this Association

Our purpose in forming this association is to enable people to see the Exposition, San Francisco and the whole Bay region at the lowest cost, and at the same time enjoy first class service, and to have absolute protection against overcharges. We are able to sell these San Francisco and Exposition tours at the exceedingly low price of \$36.50, including strictly first class hotel accommodations, owing to contract which we have with a chain of five large hotels, under the ownership of A. O. Stewart, who is one of the directors of this Association. Otherwise the hotels, rooms with private bath, alone, without meals, sight seeing trips, automobile service or Exposition tickets, might cost as much or more than the entire price of these tours.

Side Trips and Admission to Exposition Concessions on Joy Zone

These side trips and Exposition tickets will fill up every spare minute of your time, and give you the most glorious time of your life.

Six admissions to Exposition and ten tickets to Concessions on Joy Zone.

The following Free Side Trips in and Around San Francisco

1. Scenic Mill Valley and Mt. Tamalpais or Muir Woods.
2. R. R. trip down Ocean Shore.
3. Key Route trans-bay trip to Oakland, Berkeley, Greek Theater, California University, Piedmont Park and Art Gallery and Ostrich Farm.
4. Automobile sight seeing trip in S. F., Golden Gate Park, Ocean Beach, Seal Rocks and beautiful residence district.
5. Chinatown at night, autos call at hotels, and guide shows party through Oriental quarter. A unique trip.

IMPORTANT

Recommendations—Our Hotels are endorsed by the Travelers Aid Society, the Y. W. C. A., the Susan B. Anthony Club, the Rev. Dr. Charles F. Aked, Mrs. Mary S. Merrill of the Childrens' Hospital, and by Mr. James S. Webster personally, President of the Y. M. C. A. of San Francisco, and other church and welfare societies.

FOR SHORTER OR LONGER PERIODS WE WILL MAKE SPECIAL RATES

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Address all inquiries and requests for information to

D. HERBERT HEYWOOD, Secretary

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526 Holbrook Building, 58 Sutter Street, San Francisco, Cal.

CLASSIFIED.

This Department is free to Druggists, Drug Clerks, Doctors, Dentists, Chemists, Veterinarians and Nurses. Make your wants known and we will do our best to see that you get results.

DRUG APPRENTICE wants position in Bay section. Three years' experience; age 20; soon to enter college. Address, Drug Apprentice, care of The Pacific Pharmacist.

OFFICE NURSE WANTS POSITION. Have had extensive experience in physicians' and dentists' offices. Also understand stenography and typewriting. Some dental laboratory experience. Address, Office Nurse, care of The Pacific Pharmacist.

FOR SALE—Paying drug store, \$4,000; two lots, \$300. Rent \$20 per month. Average daily sales over \$20 a day. Center of new irrigating district; a splendid future. Address, A. F. Hyer, Ripon, Cal.

WANTED—To hear from owner of good drug store for sale. Send price and full particulars to D. F. Bush, Minneapolis, Minn.

WANTED—A desirable tenant for a drug store, located on the northwest corner of Harrison and 14th Streets, Oakland. Right in the midst of the fashionable apartment and hotel district. Opposite the Hotel Oakland. Apply 306 14th St., Oakland.

FOR SALE AND EXCHANGE—Drug stores in 48 States. Will also furnish positions and locations for Physicians, Dentists, Pharmacists, Chemists and Veterinarians. Established 1904. Strictly reliable. Best of references. Address, F. V. Kniest, R. P., No. 505 Bee Bldg., Omaha, Neb.

The F. A. Weck Drug Store Exchange, 501 Third avenue, Richmond District, San Francisco. We give personal attention to our clients wanting to buy, sell or exchange a drug business. Having been actively engaged in the drug business in this State for over fifty years, we deem ourselves competent to protect your best interests and refer to any or all with whom we have had dealings as to our responsibility. We make a moderate charge for selling when a sale is made by us and will save you time and money if you will place your business in our hands. Correspondence solicited. We submit below a list of our **BUSINESS OPPORTUNITIES**. If you are interested, notify us promptly at 501 Third avenue, San Francisco, Cal.:

DRUG STORE for sale in San Francisco, \$3000. Good transient trade on Market street, well located and business can be improved.

WANTED—A paying drug store in a prosperous town, valued at about \$2,000 cash.

WANTED—A small drug store in growing town on easy terms. Can pay \$500 cash and monthly payments.

WANTED—Drug store by an Eastern gentleman valued at about \$3000, located in the city or one of the bay towns. Business must bear close investigation and be desirable in every particular. Submit your offer to F. A. Weck Drug Store Exchange.

WANTED—A drug store for \$3000 to \$4000 in one of the Bay towns, but Oakland preferred. Store must stand investigation and show value for the price asked.

DRUG STORE for sale, San Francisco, \$850. Located in the Mission; owned by a lady anxious to retire. Good opportunity for druggist with a small capital to build up a good paying business.

DRUG STORE for sale, San Francisco, \$2000. Small store, located on a prominent street in the business center, doing a good business. Will stand investigation.

DRUG STORE for sale in Nevada, \$850. Small store in a rich mining camp; splendid opening for a physician; no drug store or doctor within fifty miles. Doctor can get contract work from several mining corporations. Beautiful mountain location.

DRUG STORE for sale, San Francisco, \$2700. Good corner on car line. Good family trade, clean stock and low rent. Will stand strict investigation.

DRUG STORE for sale, San Francisco, \$4000.

On prominent business corner, Richmond District; modern fixtures, clean stock, doing good business; owner wanting to leave State is the only reason for offering store for sale. This is an exceptionally good offer for any live druggist.

DRUG STORE for sale, Oakland, \$1200. Drug store well located, doing a fair business, which could be much improved by active man; now owned by a lady wishing to retire.

DRUG STORE for sale in San Francisco, \$4000, or at invoice. Located on a good business corner; clean stock and good business. Any one wanting to embark in the drug business in the city should investigate this offer at once.

DRUG STORE for sale, San Jose, \$3000. Good location, clean stock, good business and small expenses.

DRUG STORE for sale in State of Nevada \$5000. In one of the largest mining towns in Nevada; doing a large business; owner has interest in California and anxious to remove to this State.

DRUG STORE for sale, San Francisco, \$4000. Located on one of the principal business streets in San Francisco; fine retail trade; owners have other interests requiring their time and attention.

DRUG STORE for sale in Plumas Co., \$3000, or will sell store and brick building for \$6000. This is an exceptionally good offer, located in a thrifty lumbering district and summer resort. Reasonable terms would be considered, as owner has Federal office requiring all of his time.

DRUG STORE for sale in Marin Co., \$6000. First-class, up-to-date store; good business, old established and well organized; located in an ideal home town.

DRUG STORE for sale in Los Angeles, \$6500. Up-to-date store with many specialties, affording good profits. Good reason for wanting to sell.

DRUG STORE for sale, Sacramento, \$8000. Money-making business, well established and good location. Good opportunity for a live man with sufficient capital.

DRUG STORE for sale, San Jose, \$8500. Old established business. Well located, modern, up-to-date fixtures, clean stock and doing a good business. Owner has other business and will sell at invoice or lump or exchange for real estate.

DRUG STORE for sale, Sonoma Co., \$3750. A splendid money-making store near several summer resorts and large surrounding country. Good prescription business and specialties.

DRUG STORE for sale, Oakland, \$500. This is a small store for little money, but could be much improved with additional capital and close attention.

DRUG STORE for sale in Marin Co., \$3000. Up-to-date store, modern fixtures and clean stock; located in an ideal town. Good business and small expenses. Will stand investigation.

DRUG STORE for sale in Santa Cruz Co., \$2500. Old established drug store in one of the best towns in California. Good opportunity for active man. Owner wants to retire on account of old age.

DRUG STORE for sale in Oakland, \$3000. Good business, modern fixtures, clean stock; owner has interest in Southern California requiring his attention.

DRUG STORE wanted, valued at \$3000 to \$5000, in city or bay town, in exchange for ranch in Fresno or improved property in Alameda. Only a good paying business will be considered.

PHYSICIAN WANTED with about \$1000 to buy a small drug stock and take up practice in a prosperous mining section. The old resident physician of the place for seven years died recently, leaving the place vacant.

DRUG STORE wanted in exchange for equity of \$1800 in a bungalow valued at \$4000 located at Claremont, Oakland.

DRUG STORE wanted by a young man valued at \$1000 to \$1500 in a growing town with population over 1000.

DRUG STORE wanted, valued at about \$3000, in exchange for good improved property in Southern Oregon.

DRUG STORE for sale, Idaho, \$6000. Located in a rich stock and dairying country in beautiful valley; only drug store in town and large surrounding country; full prices for everything; big soda trade; owner very much out of health and compelled to give up business; two or three thousand dollars down and balance \$50 per month could be arranged.

If interested in the above list of business opportunities, address F. A. Weck Drug Store Exchange, 501 Third avenue, San Francisco, Cal.

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**FLAG, FLORAL AND PICTORIAL
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**FURNISHED, PLACED AND REMOVED
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FOUR DAILY THROUGH TRAINS

SAN FRANCISCO (Ferry Station) TO CHICAGO

ACROSS THE SIERRA, ABOVE THE

GORGE OF THE AMERICAN RIVER, AND

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"Overland Limited"

Extra Fare \$10
Leave 4:00 P. M.

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"Atlantic Express"

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College of Pharmacy, University of California

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Bacteriology

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ALBERT SCHNEIDER, M. D., Ph. D., Professor of Economic Botany, Pharmacognosy and Bacteriology.

HENRY B. CAREY, B. S., M. D., Professor of Botany, Materia Medica and Physiology.

F. W. NISH, Ph. G., Phar. B., Professor of Pharmacy and Director of the Pharmaceutical Laboratory.

H. M. SIMMONS, Ph. G., M. D., Associate Professor of Pharmacy and Materia Medica and Lecturer on Toxicology.

H. R. WILEY, LL. B., Lecturer on Pharmaceutical Jurisprudence.

JAMES N. PATTERSON, Ph. C., Phar. B., Assistant in the Chemical Laboratories.

R. A. LEET and VAL SCHMIDT, Lecturers on the Business Side of Pharmacy.

Admission—Two years of high school work or its equivalent are required to enter upon the regular college course (Ph. G. degree).

Degrees—Graduate in Pharmacy (Ph. G.) on completion of the two years' course. Bachelor of Pharmacy (Phar. B.) on completion of the three years' course.

NEXT TERM WILL OPEN SEPTEMBER 1, 1915

Course in Drug and Food Analysis

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The next course will begin September 11, 1915, and end April 30, 1916.

For further information, address FRANK T. GREEN, Dean.

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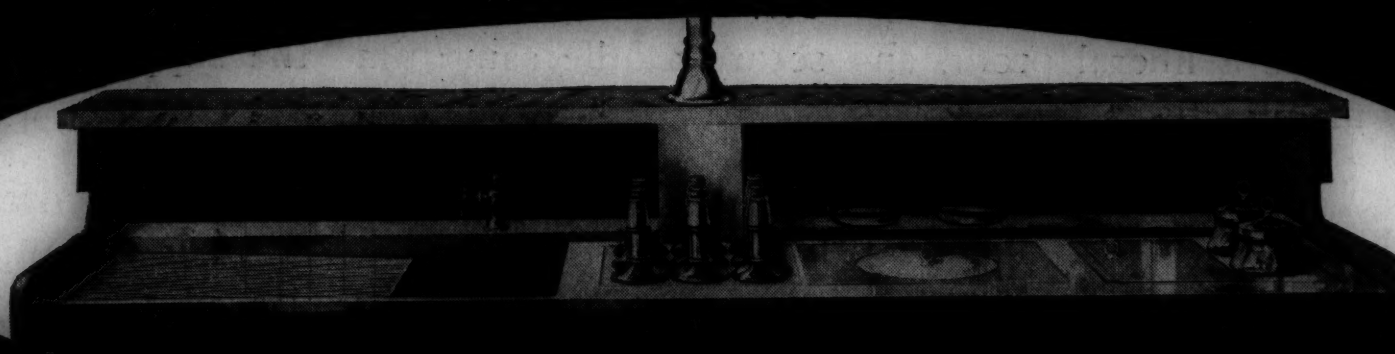
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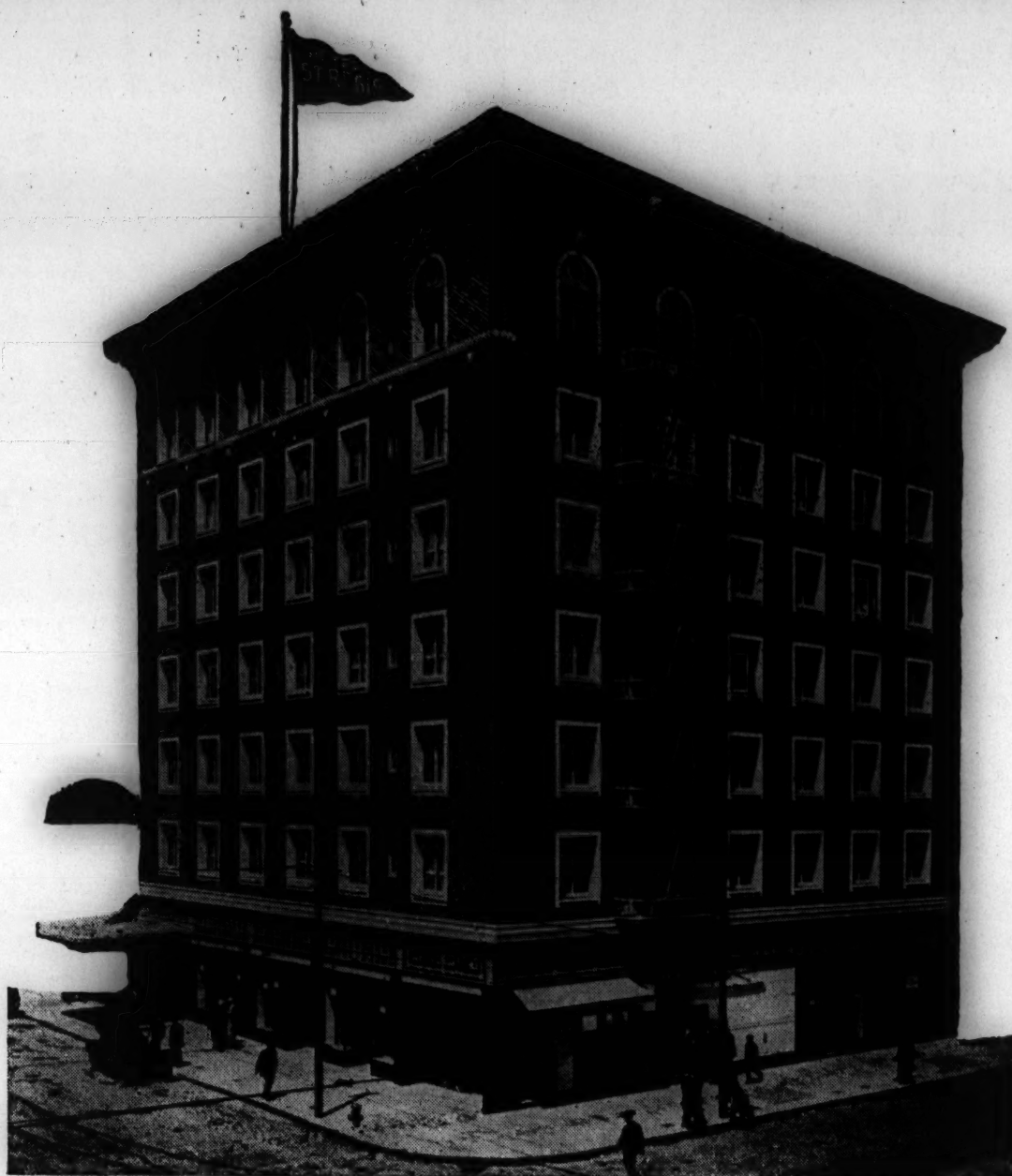
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